

TCEQ RADIONUCLIDE ANALYSIS LABORATORY REPORT

TEXAS COMMISSION on
ENVIRONMENTAL QUALITY (TCEQ)

P. O. BOX 13087
AUSTIN, TEXAS 78711-3087

Handling Instructions: ☒ Routine ☐ Urgent ☐ Priority (short half-life)
Purpose: ☐ Close Out/Groundwater Restoration ☐ Baseline (Pre-Operation) ☒ Compliance
Sample Collected From: ☒ Unrestricted Area ☐ Restricted/Controlled Area
☒ Chemical Analysis Also Performed PCA # _____ Index No _____

Contact: M. Abbaszadeh
Phone/MC: 512-239-6978 / 177
Submitter No. _____

Water only: ☐ Acidified ☐ Filtered
☒ Not Acidified ☒ Not Filtered

Suspected Radionuclides: U-238, Ra-226

☐ Soil
Type: ☐ Sediment
☐ Vegetation
☐ Wipe
☐ Other _____

☒ Water
Type: ☐ Monitor Well
☐ Baseline Well
☐ Surface Water
☒ Other Water wells

Facility Category: ☐ Uranium Recovery ☐ Waste Processing
☐ Low Level Radioactive Waste/Material ☐ Buried Radioactive Waste
☐ Mixed Waste Treatment Facility ☐ By-Product Waste/Material
☐ Other Private Water wells at Garcia Hill community

Radiation Surveys Results: Bkg: 6uR/hr Sample: Bkg

Sample Number 1 of 4
Sample location Active (working) well/Garcia Hill
Operator / Facility Not Applicable (NA)
Permit/License No NA
Notes Sample was clear with no odor

INDICATE THE REQUIRED ANALYSIS BELOW
☒ Total Analysis ☐ TCLP ☐ Dissolved Analysis

Detection Limit Requested NA

☒ GAMMA SCAN

Radionuclide

_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/

I certify this sample was collected by me at 9:34 AM
on 12/20/12 and remained in my custody until
transfer to DSHS Lab
at 9:35 AM on 12/21/12
Signature: M. Abbaszadeh

I certify this sample was constantly in my custody from the time of
receipt listed hereon until transferred to DSHS
at 09:36 AM on 12/21/12
Signature: Steve Carls

I certify this sample was constantly in my custody from the time of
receipt listed hereon until transferred to _____
at _____ : _____ M on _____
Signature: _____

ALPHA COUNT


Gross alpha	uCi/
Radium 226	uCi/
Total Uranium	uCi/
Total Uranium	ug/
Radon-222	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/

BETA COUNT

Gross beta	uCi/
Tritium	uCi/
Radium-228	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/

☒ ALPHA SPECTROSCOPY

_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/

FOR USE AC07093 A
Laboratory Identif EU 12 21 2012
Date Received MISC RADIOCHEM
Condition of Seals  sfactory
Comments _____
Wet (as received) Weight _____
Dry Weight _____ Ash Weight _____
Notes _____

I certify this sample was constantly in the laboratory custody from the time
of receipt and after the report date listed below until transferred to the
TCEQ staff.

Signature and Title of Person Completing this form

Print Name/Report Date MAR 18 2013 mp

Texas Department of State Health Services Laboratory

1100 West 49th Street
Austin, Texas 78756-3194

Environmental Sciences Branch Radiochemical Analysis Report

Tel. (512) 776-7587
FAX (512) 776-7757

DSHS Sample Number: **AC07093**
Sample Type: Water
Submitter: TCEQ
Submitter ID: Garcia Hill
Active (working) well
TCEQ Sample ID: 1 of 4

Date Collected: 12/20/12 9:34 AM
Date Received: 12/21/12

Analyte/ Radionuclide	Method	Activity	Combined Standard Uncertainty k=1	Units	MDA	Critical Level
Radium-226	SM 7500-Ra D	1.08E-09	6E-11	µCi/ml	3E-11	1E-11
Total Uranium	SM 7500-U C	1066	82	µg/ml	4.7	2.3
Uranium-234	SM 7500-U C	3.23E-07	2.3E-08	µCi/ml	1.1E-09	6E-10
Uranium-235	SM 7500-U C	2.1E-08	3E-09	µCi/ml	1.6E-09	8E-10
Uranium-238	SM 7500-U C	3.55E-07	2.7E-08	µCi/ml	1.3E-09	7E-10
Total Uranium Activity	SM 7500-U C	6.99E-07	5.4E-08	µCi/ml	4.0E-09	2.0E-09
Gross Alpha	EPA 900.0	6.79E-07	9E-09	µCi/ml	1.6E-09	8E-10
Gross Beta	EPA 900.0	3.56E-07	5E-09	µCi/ml	3.9E-09	2.0E-09

Analyte/ Radionuclide	Tracer/ Carrier Yield	Sample Volume/Mass Used (mL)	Batch ID	Analysis Date	Analyst	Data Reviewer
Radium-226	0.708	2000	50814	24-Jan-13	SAW	SJG
Total Uranium (µg/ gram)	0.778	50	51835	12-Feb-13	SJG	VK
Uranium-234	0.778	50	51194	12-Feb-13	SJG	VK
Uranium-235	0.778	50	51194	12-Feb-13	SJG	VK
Uranium-238	0.778	50	51194	12-Feb-13	SJG	VK
Total Uranium Activity	0.778	50	51194	12-Feb-13	SJG	VK
Gross Alpha	N/A	100	51836	22-Feb-13	BT	SJG
Gross Beta	N/A	100	51837	22-Feb-13	BT	SJG

(1) Gamma Spectroscopy				
Analysis Date:	9-Feb-13	Results Decay Corrected to Date of Sample Collection		
Analyst:	SM			
Data Reviewer:	SM			
Batch ID:	51306			
Units:	µCi/ml			
Methods:	DOE GA-01-R			
Weight/Volume:	1000 ml			

Analyte/ Radionuclide	Activity	Combined Standard Uncertainty k=1	MDA	Critical Level
Ra-226	2.97E-07	1.49E-07	8.6E-08	4.3E-08
U-238	2.75E-07	2.3E-08	7.7E-08	3.9E-08

The test results on this report relate only to the sample identified on this report. The test results for analytes noted (1) meet all TNI (2009 Standard) requirements.

Case narrative:

This sample had to be reprepared for Uranium analysis due to low tracer yield on the initial preparation.

Gross alpha results possibly bias low due to matrix effect.

Ra-226 gamma result possibly bias high due to uranium interferences.

Approval Signature: _____

Date Reported: _____

[Signature]

MAR 10 2013

mp

Team
leader/
Group
manager

Date Approved: _____

3/14/13

Rev. 2 2-29-12

TCEQ RADIONUCLIDE ANALYSIS LABORATORY REPORT

TEXAS COMMISSION on
ENVIRONMENTAL QUALITY (TCEQ)

P. O. BOX 13087
AUSTIN, TEXAS 78711-3087

Handling Instructions: ☒ Routine ☐ Urgent ☐ Priority (short half-life)
Purpose: ☐ Close Out/Groundwater Restoration ☐ Baseline (Pre-Operation) ☒ Compliance
Sample Collected From: ☒ Unrestricted Area ☐ Restricted/Controlled Area
☒ Chemical Analysis Also Performed PCA # _____ Index No _____
Water only: ☐ Acidified ☐ Filtered ☒ Not Acidified ☒ Not Filtered

Contact: M. Abbaszadeh
Phone/MC: 512-239-6978 / 177
Submitter No. _____

Suspected Radionuclides: U-238, Ra-226

☐ Soil Type: ☐ Sediment ☐ Vegetation ☐ Wipe ☐ Other _____
☒ Water Type: ☐ Monitor Well ☐ Baseline Well ☐ Surface Water ☒ Other Water wells

Facility Category: ☐ Uranium Recovery ☐ Waste Processing
☐ Low Level Radioactive Waste/Material ☐ Buried Radioactive Waste
☐ Mixed Waste Treatment Facility ☐ By-Product Waste/Material
☐ Other Private Water wells at Garcia Hill community

Radiation Surveys Results: BKG ~ 6 uR/hr Sample: BKG
Sample Number 4 of 4
Sample location concrete storage tank/Garcia Hill
Operator / Facility Not Applicable (NA)
Permit/License No NA
Notes Sample was rusty looking with no odor

INDICATE THE REQUIRED ANALYSIS BELOW
☒ Total Analysis ☐ TCLP ☐ Dissolved Analysis
Detection Limit Requested NA
☒ GAMMA SCAN

I certify this sample was collected by me at 9:50 AM
on 12/20/12 and remained in my custody until
transfer to DSHS Lab
at 9:35 AM on 12/21/2012
Signature: m. abbaszadeh

I certify this sample was constantly in my custody from the time of
receipt listed hereon until transferred to DSHS
at 09:36 AM on 12/21/12
Signature: Steve Cochran

I certify this sample was constantly in my custody from the time of
receipt listed hereon until transferred to _____
at _____ M on _____
Signature: _____

FOR USE BY LABORATORY ONLY

Laboratory Identification: AC07096 A
Date Received EU 12/21/2012
Condition of Seals MISC RADIOCHEM
Comments _____
Wet (as received) Weight _____ Ash Weight _____
Notes _____

I certify this sample was constantly in the laboratory custody from the time
of receipt and after the report date listed below until transferred to the
TCEQ staff.

Signature and Title of Person Completing this form _____

Print Name/Report Date MAR 18 2013 mp

_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/

ALPHA COUNT

Gross alpha	uCi/
Radium 226	uCi/
Total Uranium	uCi/
Total Uranium	ug/
Radon-222	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/

BETA COUNT

Gross beta	uCi/
Tritium	uCi/
Radium-228	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/

ALPHA SPECTROSCOPY

_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/
_____	uCi/

Texas Department of State Health Services Laboratory

1100 West 49th Street
Austin, Texas 78756-3194

Environmental Sciences Branch Radiochemical Analysis Report

Tel. (512) 776-7587
FAX (512) 776-7757

DSHS Sample Number: **AC07096**
Sample Type: Water
Submitter: TCEQ
Submitter ID: Garcia Hill
Concrete storage tank
TCEQ Sample ID: 4 of 4

Date Collected: 12/20/12 9:50 AM
Date Received: 12/21/12

Analyte/ Radionuclide	Method	Activity	Combined Standard Uncertainty k=1	Units	MDA	Critical Level
Radium-226	SM 7500-Ra D	6E-11	2E-11	µCi/ml	3E-11	2E-11
Total Uranium	SM 7500-U C	7.3	1.1	µg/ml	0.58	0.29
Uranium-234	SM 7500-U C	5.2E-09	5E-10	µCi/ml	2E-10	1E-10
Uranium-235	SM 7500-U C	1.8E-10	9E-11	µCi/ml	2E-10	1E-10
Uranium-238	SM 7500-U C	2.4E-09	3E-10	µCi/ml	2E-10	8E-11
Total Uranium Activity	SM 7500-U C	7.8E-09	1.0E-09	µCi/ml	6E-10	3E-10
Gross Alpha	EPA 900.0	9.3E-09	1.1E-09	µCi/ml	1.6E-09	8E-10
Gross Beta	EPA 900.0	1.0E-08	1E-09	µCi/ml	3.8E-09	1.9E-09

Analyte/ Radionuclide	Tracer/ Carrier Yield	Sample Volume/Mass Used (mL)	Batch ID	Analysis Date	Analyst	Data Reviewer
Radium-226	0.630	2000	50814	24-Jan-13	SAW	SJG
Total Uranium (µg/ gram)	0.848	500	51838	5-Feb-13	SJG	VK
Uranium-234	0.848	500	51201	5-Feb-13	SJG	VK
Uranium-235	0.848	500	51201	5-Feb-13	SJG	VK
Uranium-238	0.848	500	51201	5-Feb-13	SJG	VK
Total Uranium Activity	0.848	500	51201	5-Feb-13	SJG	VK
Gross Alpha	N/A	100	51836	22-Feb-13	BT	SJG
Gross Beta	N/A	100	51837	22-Feb-13	BT	SJG

(*) Gamma Spectroscopy				
Analysis Date:	9-Feb-13	Results Decay Corrected to Date of Sample Collection		
Analyst:	SM			
Data Reviewer:	SM			
Batch ID:	51306			
Units:	µCi/ml			
Methods:	DOE GA-01-R			
Weight/Volume:	1000 ml			
Analyte/ Radionuclide	Activity	Combined Standard Uncertainty k=1	MDA	Critical Level
Pb-212	5.0E-9	1.7E-09	5.7E-09	2.9E-09
Ra-226	2.23E-07	1.7E-08	4.6E-08	2.3E-08
U-238	4.09E-07	6.7E-08	1.06E-07	5.3E-08

The test results on this report relate only to the sample identified on this report. The test results for analytes noted (*) meet all TNI (2009 Standard) requirements.

Case narrative:

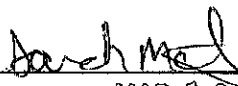
No problems were encountered in the analyses of this sample.

Gross alpha results possibly bias low due to matrix effect.

Ra-226 gamma result possibly bias high due to uranium interferences.

Approval Signature:

Date Reported:


MAR 18 2013
mp

Team
leader/
Group
manager

Date Approved:

3/14/13

Rev. 2 2-29-12